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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/439,314	11/12/1999	GURTEJ S. SANDHU	95-0392.02	1503

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EXAMINER

DANG, THI D

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 05/28/2002

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/439,314

Applicant(s)

SANDHU ET AL.

Examiner

Thi Dang

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 41-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-69 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

The final rejection is now withdrawn in view of the following new grounds of rejection.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 41-44 and 50-56 are rejected under 35 U.S.C. 102(e) as being anticipated by *Kumagai*.

*Kumagai* discloses a plasma processing apparatus that has a plasma ignition chamber (30) connected to a plasma processing chamber (11) (Fig. 1; col. 3). The means for generating the plasma in these chambers are separate from each other. The plasma processing chamber (11) of *Kumagai* is structurally equivalent to the claimed “second chamber” because it is *configured* to generate a second plasma. *Kumagai* also discloses that the ignition device can be applied to plasma etching device or plasma

CVD (col. 6, lines 10-15). The plasma processing chamber (11) of *Kumagai* is also structurally equivalent to the claimed "furnace" because it is a quartz tube *configured* to house a high density plasma. The plasma ignition chamber (30) of *Kumagai* is structurally equivalent to the claimed "first chamber" because it is configured to generate a plasma therein. The plasma ignition chamber (30) of *Kumagai* is also structurally equivalent to the claimed "cleaning chamber" because it is *configured* to house a gas capable of etching metal. Thus, *Kumagai's* apparatus meets the structural limitations of applicants' apparatus as recited in claims 41-59.

Claims 57-59 are rejected under 35 U.S.C. 102(b) as being anticipated by *Shang* et al.

*Shang* discloses a PECVD apparatus having a system for cleaning the deposition chamber surface with a remote plasma (col. 4, lines 4-63). The cleaning system generates plasma in a remote chamber (46) and introduces the plasma to the deposition chamber (10) to remove deposits on the inner surfaces. The wafer processing system as claimed does not define structurally over that of *Shang*.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 45-49, 60-69 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Shang* et al. in view of *Lantsman*.


*Shang* discloses that PECVD systems used for depositing films on wafers form deposits onto the interior surfaces of the deposition chamber during the deposition process (col. 1, lines 2329). *Shang* teaches to clean the inner surfaces of the PECVD apparatus using plasma activated at a remote chamber (col. 4, lines 4-63). The PECVD apparatus disclosed by *Shang* is not an inductively-coupled type. *Lantsman* discloses that it is conventional in the art to use a PECVD apparatus having an RF induction coil. It would have been obvious to apply the cleaning system of *Shang* to another conventional PECVD apparatus like that disclosed by <sup>*Lantsman*</sup>~~Tobin~~ because *Shang*'s cleaning technique is applicable to a variety of plasma processing apparatus.

The "first material" recited in claims 45 and 67 reads on the deposits formed on the inner surfaces of the deposits formed on the surfaces of <sup>*Lantsman*</sup>~~Tobin's~~ deposition chamber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thi Dang whose telephone number is (703) 308-1973. The examiner can normally be reached on Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (703) 308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



THI DANG  
PRIMARY EXAMINER  
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